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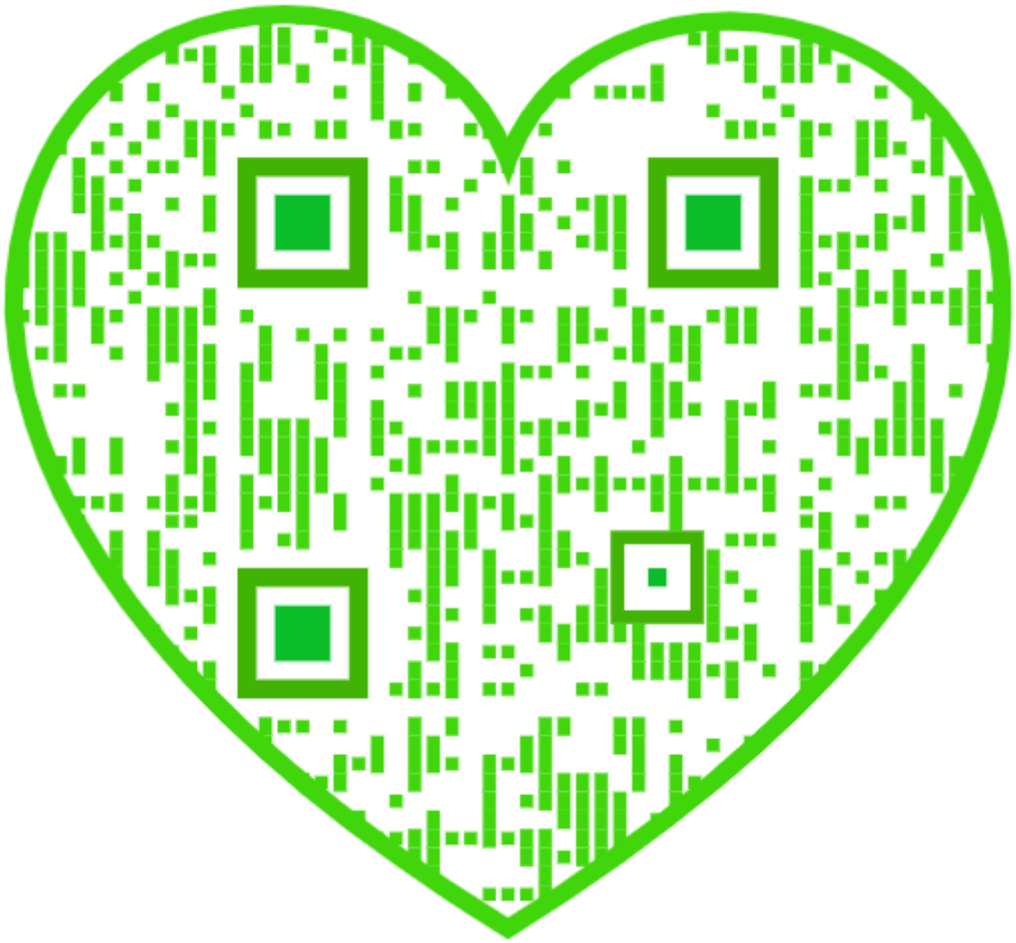

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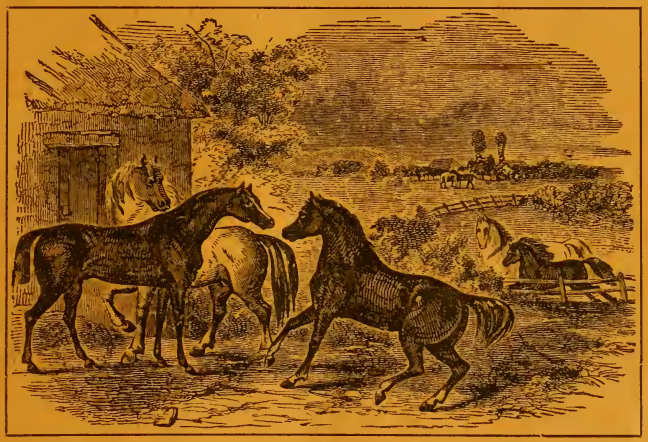
THE

FARMERS' HAND-BOOK

—OF—

VETERINARY MEDICINE.



—BY—

W. D. COLE, M. D. V. S.,

THE AUTHOR.

MANKATO, MINN.,

1880.

THE

Farmers' Hand-Book

—OF—

VETERINARY MEDICINE.

A RATIONAL GUIDE

TO THE LATEST METHOD OF TREATING THE PRINCIPAL DISEASES TO WHICH THE EQUINE RACE ARE SUBJECT, AND ESPECIALLY DESIGNED FOR THE USE OF THE FARMER LIVING OUT OF THE REACH OF MEDICAL ADVICE, SHOWING HIM A WAY OF TREATING HIS HORSES WHEN THEY ARE SICK, IN THE MOST SIMPLE, SAFE AND EXPEDITIOUS MANNER, WITH ALL THE REQUISITE PRESCRIPTIONS WRITTEN IN PLAIN ENGLISH.

ALSO

A SHORT CHAPTER ON THE HORSES' FOOT,

WITH SUITABLE INSTRUCTION ON SHOEING,

—BY—

WILLIAM D. COLE, M. D. V. S.,

Late Veterinary Surgeon U. S. A.

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GEO. W. NEFF, BOOK AND JOB PRINTER.
1880.

TO

CHARLES F. WARNER, M. D.,

As a testimony for many acts of kindness which the author has received, and as an appreciation of his medical skill, this book is respectfully dedicated by his most humble servant,

WILLIAM D. COLE.

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INTRODUCTION.

In presenting this little work to the public, the author is conscious that he is treading on dangerous ground; for, in order to be popular with the people, an author must necessarily express views in accordance with the stereotyped opinions of his readers. When he deviates from this path, he must expect that blows will fall thick and fast, from the right hand and from the lef.

With a perfect understanding of the existing prejudices among a large majority of horse owners, against a rational method of treating their diseased animals, we venture to offer them wholesome advice: and are willing to abide the consequences of our rashness.

The country has been flooded with "horse literature": yet, to the average reader, it is not worth the paper on which it is printed. And why? Because, 1st: He does not understand it. The writers have been so technical, that their works have been unintelligible, except to the highly educated. Second: The most of the veterinary works in use, eminate from the old country, where Equine diseases are very different from what they are in this country; besides, the treatment prescribed, is vague and unsatisfactory.

While the science of Human Medicine has been progressing with gigantic strides; Veterinary Medicine has remained at nearly a stand still for nearly fifty years. Bleeding, purging and emetics have been discontinued—except in rare cases—from Human practice; yet in Vetrinary practice, we find the average "Horse Doctor", bleeding, giving cathartics, and using the Seton, for nearly every disease to which the Equine race are subject.

If a human being is sick, his friends—with all haste—send for the best physician that can be found. How different with the poor brute slave. Nearly every man that owns a horse—however ignorant he may be—thinks that he is capable of treating poor animated nature, and the poor horse is forced to swallow all the villainous compounds that can be devised by the master and his neighbors, until, fearing that he will lose his slave, he sends for some "Horse Doctor", equally ignorant with himself, to come and see the poor old horse die. He will not employ an educated vetrinarian;

but he must have some one equally ignorant with himself. From this class of humanity, the author expects harsh and severe criticism.

In this matter, however, there is no such thing as compulsion. They are at liberty to read the book, or to let it alone, as it may suit their convenience.

The book was written for the benefit of another class of men—though largely in the minority—who practice humanity toward their animals, when they are well, and when sick, strive to alleviate their sufferings.

The author having determined to relinquish the practice of Vetrinary Medicine—upon the earnest solicitation of friends—concluded to place his past experience before the public; and if by so doing, the condition of the Equine race while suffering from disease, should be ameliorated, it will be ample remuneration for all the criticism the work will bring forth.

The work has been hastily written, and in many respects is far from being perfect. In the description of disease, and in giving their symptoms the author has sometimes copied from "text books", but the treatment in nearly every case, is original. No form of treatment, and no remedies are given but such as have been thoroughly tested during a practice of more than twenty years, with the most gratifying results. No remedies are recommended but such as are perfectly safe, when given in proper doses; as they are the same remedies which are given every day to human beings, by the best physicians of the land.

The author feels confident that this work—though diminutive in size—will prove a lasting benefit to every owner of the horse, who may faithfully follow its instructions. Only the diseases which are the most common are treated, it is true, yet it would be folly in a work of this kind, to try and instruct every one how to treat diseases that can only be treated by a skillful practitioner. By keeping a few of the remedies always on hand, and attending to a sick animal promptly at the first appearance of disease; in the majority of cases not only can money be saved, but the life of the animal also.

In the article on shoeing, the author speaks from practical knowledge, and advises every owner of a horse to give the advice there given, a thorough trial; then if he is not satisfied with the theory, he will be at liberty to discard it.

With these few remarks, we take leave of this little work, trusting that the recommendation herein given, may prove of lasting benefit to all who read its pages.

THE AUTHOR.

HINTS TO BE REMEMBERED.

It is easier to keep a horse in health, than to cure him when sick.

Never give a horse more than one pail of water at a time.

It is not the amount of food which a horse eats that benefits him, but the amount that is properly digested. Therefore, feed no more than the stomach will thoroughly digest.

Never increase the feed on account of a hard day's work.

Feed your horses regular, and at stated periods.

After driving your horses to the market town, do not let them stand out in the wind and cold, thinking thereby to save ten cents with which to buy whisky. Better by far to pay the ten cents for stabling your horses, and do without the whisky.

When your horses are sick, never give them any medicine that you would not take yourself under similar circumstances, even if your neighbors do recommend it.

Bots never kill a horse, or make him sick; therefore, do not keep drugging your horses for bots.

Glanders cannot be cured, therefore, it is a safe method to slaughter the animal as soon as the disease manifests itself.

Never permit the blacksmith to pare the frog of your horse's foot; or to fit the shoe while hot.

Keep always on hand a few simple remedies, that you may administer them in season, and thereby, perhaps save the life of your animal.

Hens' inwards, soft soap, ashes, or filth of any kind were never in-

tended to enter the stomach of any animal, therefore, should never be administered.

Medicines that should always be kept in the stable:

Tincture of Aconite,	dose for a horse, -	10 drops.
" Belladona,	" " "	10 drops.
" Colycinth,	" " "	5 to 10 drops.
Fluid Extract Gelsemium,	" " "	10 drops.
Tincture Arnica,	" " "	10 drops.
Sulphate of Morphia,	" " "	3 to 5 grains.
Tincture Opium,	" " "	1 to 2 ounces.
Sulphuric Either,	" " "	1 to 2 ounces.
Raw Linseed Oil,	" " "	1 to 2 quarts.

An 8 or 10 ounce syringe and a drenching bottle should also be kept in every stable where there are horses.

A bottle of black Oil for which a formula will be found in the back part of the book, and a bottle of the No. 1 Liniment, should also be kept prepared ready for use.

Shoeing.

The object in shoeing horses is to prevent the hoofs from being broken or otherwise injured, as would naturally result from driving over our hard roads unprotected.

A horse without sound feet is of little value; hence the necessity of protecting the feet by artificial means against the abuses incident to the life of an animal which before being domesticated to a life of slavery, roamed at will o'er the vast extended plains of the East, feeding on green grasses, drinking from the running brook, and provided by a benificent Providence, with a soft velvety carpet—moistened by the dews and rains of Heaven—to walk upon.

It is claimed by those writers who have made themselves conversant with the habits of the horse in his wild or native state, that a horse, lame from any defects of their feet is seldom if ever seen. Many men arguing from this standpoint claim, that it being natural for horses to go barefoot, it is folly to go to the expense of getting them shod. While reasoning thus, they overlook one very important point. A horse domesticated, is not the same animal as the horse in his wild or natural state. The domesticated horse feeds on dry food, stands on a hard dry floor, and travels on dry hard roads. Durin the summer season there are weeks and oftentimes months, that the

feet do not come in contact with moisture, and in consequence, the hoofs become dry, hard and brittle. In this condition the hoofs are liable to become broken or cracked, rendering the animal lame and unfit for service.

To prevent this it is necessary that artificial means should be adopted to preserve the feet from injury.—First, means should be adopted to keep the feet soft and pliable. This subject will be treated more fully hereafter. Second, the best method of protecting the feet from injury is by the aid of shoes.

The feet are the basis upon which the whole superstructure rests, a beautiful and complicated piece of mechanism, and, like all complicated machinery, easily deranged ; hence, the necessity of preserving it in a healthy state, to accomplish which, shoeing has been instituted, which, when properly done, has the desired effect. The shoe has two very important offices to perform : 1st., to preserve the hoof in its natural shape ; 2nd., to protect it from injury.

In order to properly understand the principles of shoeing, it is necessary that we should understand the structure of the horse's foot, and with this view we will briefly consider some of its anatomical relations.

The foot is composed of the horny box that covers the extremities of the horse, and the contents of that box. The hoof or box is composed of the crust or wall, the coronary ring and band, the bars, the horny *laminæ* (layers,) the sole, and the horny frog.

The crust, or wall, is that portion which is seen when the foot is placed on the ground, and reaches from the termination of the hair to the ground.

The crust is composed of numerous horny fibres, connected together by an elastic membraneous substance, and extending from the coronet to the base of the hoof. It differs materially in its texture, its elasticity, its growth, and its occasional brittleness according to the state in which it is kept, and the circumstances that are acting upon it.

The thickness of the crust in the front of the foot, is rather more than half an inch ; it becomes gradually thinner toward the quarters and heels, but this often varies to a considerable extent.

While the crust becomes thinner towards both quarters, it is more so at the inner quarter than at the outer, because more weight is thrown upon it than upon the outer. It is more under the horse, and being thinner, it is able to expand more. Its elasticity is called more into play, and concussion and injury are avoided. When the

expansion of the quarters is prevented by their being nailed to an unbending shoe, the inner quarter suffers most. Corns are oftenest found there; contraction begins there; sand-crack is seated there. Nature meant that this should be the most yielding part, in order to obviate concussion, because on it the weight is principally thrown, and therefore, when its power of yielding is taken away it must be the first to suffer.

A careful observer will likewise perceive that the inner quarter is higher than the outer. While it is thin to yield to the shock, its increased surface gives it sufficient strength.

At the back part of the foot the wall of the hoof, instead of continuing round and forming a circle, is suddenly bent in, making an inflection or bending at the heel. The bars are, in fact, a continuation of the crust, forming an acute angle, and meeting at a point at the toe of the frog; and the inside of the bars, like the inside of the crust, presents a continuation of the horny leaves, showing that it is a part of the same substance, and helping to discharge the same office.

It needs only the slightest consideration of the natural hoof, to show the importance of the bars. The arch which these form on either side, between the frog and the quarters, is admirably contrived, both to admit of, and to limit to its proper extent, the expansion of the foot.

When the foot is placed on the ground, and the weight of the animal is thrown on the leaves of the inside of the bars, these arches will shorten and widen, in order to admit of the expansion of the quarters—the bow returning to its natural curve, and powerfully assisting the foot in regaining its usual form. It can also be conceived that these bars must form a powerful protection against contraction, or *wiring in*, of the quarters. A moment's inspection of the natural foot will show that, if the bars are taken away, there will be nothing to resist contraction or falling in of the quarters, when the foot is exposed to any disease, or bad management, that would induce it to contract- One moments observation of them will also render evident the security which they afford to the frog, and the effectual protection which they give to the lateral portions of the foot.

Then appears the necessity of passing lightly over them, and leaving prominent, when the foot is pared for shoeing, that which so many smiths cut perfectly away. They imagine that it gives a more open appearance to the foot; and thus they too often habitually pursue, with regard to all their customers, the injurious practice of

removing the bars. The horny frog thus deprived of its guard, will speedily contract, and become elevated and thrushy; and the whole of the heel, having lost the power of reaction which the curve between the bar and the crust gave it, will speedily fall in.

The inside of the crust is covered by thin horny leaves, extending all round it, and reaching from the coronary ring to the toe. They are about five hundred in number, broadest at their base, and terminating in the most delicate expansion of horn. They not a little resemble the inner surface of a mushroom.

They correspond with similar cartilaginous and fleshy leaves on the surface of the coffin-bone, and form a beautiful elastic body, by which the whole weight of the horse is supported.

THE SOLE

is under, and occupies the greater portion of the concave and elastic surface of the foot, extending from the crust to the bars and frog. It is not as thick as the crust, because, notwithstanding its situation, it does not support so much weight as the crust; and because it was intended to expand, in order to prevent concussion, when by the descent of the bone of the foot, the weight was thrown upon it.

In a state of nature it is, to a certain degree hollow. The reason of this is plain. It is intended to descend or yield with the weight of the horse, and by that gradual descent or yielding, most materially lessens the shock which would result from the sudden action of the weight of the animal in rapid and violent exercise; and this descent can only be given by a hollow sole. A flat sole, already pressing upon the ground, could not be brought lower; nor could the function of the frog be then discharged; nor would the foot have so secure a hold. When if the sole is naturally hollow, and hollow because it must descend, the smith should not interfere with this important action. When the foot will bear it, he must pare out sufficient of the horn to preserve the proper concavity. He must put on a shoe that shall not only not prevent the descent of the sole, and which shall not only not press upon it, but shall leave sufficient room between it and the sole to admit of this descent.

THE FROG.

In the space between the bars, and accurately filling it, is the FROG. It is a triangular portion of horn, projecting from the sole, almost on a level with the crust, and covering and defending a soft and elastic substance called the *sensible frog*. It is firmly united to the sole

but is perfectly distinct from it. It is softer and far more elastic. It discharges various duties beside the one above named. It comes in contact with the ground and prevents the horse from slipping, especially when the heel comes first to the ground as in galloping.

To discharge these various duties, it must come in contact with the ground, and in the unshod horse it always does. The practice of cutting away the frog in shoeing, is therefore highly improper. Even the rough and detached parts should not be touched with the knife, as they do no harm, and will wear away if let alone. The crust or wall of the hoof should be pared sufficiently to bring the frog just *above or within the level of the shoes.* It will then, in the descent of the sole, when the weight of the horse is thrown upon it in the putting down of the foot, descend likewise, and pressing upon the ground, do its duty; while it will be defended from the wear and bruise and injury that it would receive if it came upon the ground with the first and full shock of the weight. The frog is of a spongy, elastic nature, furnished with a hard or horny covering, which if left alone, will in due time shed its covering in a natural way. When this horny covering is cut away, there is no protecting surface left, and the action of the atmosphere on this unprotected surface produces or causes an absorbtion of what moisture there is in the frog, and in consequence the frog becomes dry and contracted; it serves no longer as a cushion for the bones of the foot to rest upon; aids no longer in the expansion of the quarters, and results the most serious may ensue.

It has been proved by long experience, that the sensitive parts within the hoof do not suffer so long as the frog remains in a healthy condition, and the bearing of the animal is confined to the crust or wall; but when the frog becomes dry and contracted, and the weight removed from its natural bearing, the foot soon becomes diseased. Hence, if the sole of the foot bear against the shoe to any considerable degree, the fleshy or inner sole becomes bruised between the shoe and the horny sole below, and the coffin-bone above, the horse soon becomes lame in consequence. It is obvious, therefore, that the crust or wall being the natural bearing of the horse's foot, it should be carefully protected, and confine the bearing of the shoe to that part of the foot. A shoe of the breadth of the crust would defend the foot sufficiently as long as it would last; but in consequence of its rapid wear, such a shoe would only be applicable for temporary purposes

To give all the support the crust can receive, and at the same time to make the shoe sufficiently strong to wear a reasonable time, the upper surface of the shoe should be divided into two parts. The first or outer margin should be perfectly level, and of the width of the crust; the second, the inner margin, beveled inward so as to avoid pressure upon the sole, leaving the heels of the shoe perfectly level from the quarters backward.

For an ordinary sized foot, the nail-holes should be five in number; three holes in the outside of the shoe and two holes in the inside. The holes should be placed near together, commencing as near the toe as possible, so as to leave the quarters free to expand when the weight is forced against the ground. For feet of larger size it is proper to have seven nail-holes in each shoe; four in the outside and three in the inside. A shoe thus put on—if the work is properly done—will remain a sufficient length of time for the welfare of the foot. The object to be obtained by this method should not be overlooked. It has been stated that the crust or wall of the inside of the hoof is not as thick as that of the outside. The reason why nature has made this discrimination, has also been fully explained. Now by placing only two or three nails (according to the size of the foot) in the inside of the shoe, the quarter is left free, and can expand at will, as nature intended. By the common method of nailing on the shoe, the hoof from the toe, to some distance back of the quarters being confined to the unyielding iron prevents the foot from expansion and favors contraction.

It must be borne in mind that no one form of shoe is applicable to all forms and conditions of the feet. These instructions are intended for the management of the healthy foot, for the purpose of preserving its healthy state: as it deviates from that standard, so must the bearing of the shoe be altered to meet the altered conditions as they occur. To more clearly illustrate this subject we have only to refer to the injuries of shoeing as ordinarily practiced. Examine, if you please, the ordinary shoe used on all occasions, and upon all forms and conditions of the feet; place a level across the heels, and you find the shoe at the quarters presents a concave surface, being beveled from without inward; hence the foot rests in a concavity. When such a shoe is nailed to the foot, it presents a lateral resistance to the natural expansion of the foot, it being impossible for the heels to expand up these inclined planes: hence the tendency to force them inward, so that they gradually become contracted. This is a natural

result, and follows sooner or later in every case. On the other hand, shoes properly made and fitted have never been known to cause contraction.

If we observe the foot in the early stages of contraction, we find this horny case gradually becoming less; it no longer accommodates itself to the soft structure within its limits; the result is, concussion is greater, and the elasticity very much less; in consequence of which the parts become bruised, fever ensues, which still further facilitates contraction of the hoof by absorbing its moisture. The first effect of contraction is to bruise the sensitive portion of the hoof, and we soon discover lameness in consequence.

Another evil in shoeing, which is calculated to do much mischief, is the fitting of the shoe to the foot while hot. The application of the shoe in this condition cannot be made—even under the most favorable circumstances—without causing much mischief. As stated above, the wall or crust, and the sole of the foot are composed of numerous layers, or laminæ, which expand more or less, every time the weight of the animal is pressed upon them. It is calculated that this expansion is equal to the covering of four square feet of surface for each ordinary sized foot. Now anything that will have a tendency to diminish this expansion, must necessarily lead to contraction to a greater or less extent. It is an impossibillity to bring a hot shoe in contact with the hoof without destroying some of the laminæ, or layers, and each layer destroyed diminishes to that extent, the natural expansion of the foot; besides, the heat thus produced, causes an unhealthy secretion of horn for a long time after, rendering the animal less sure-footed, and often causes lameness to follow its application. The shoe should in all cases be fitted to the foot, and not the foot to the shoe. This of course would be attended with more labor; hence the unwillingness of smiths to do it. Better by far would it be for the owner to pay double price for shoeing his horse than to have injury done by the application of the red-hot shoe. If the hoof is too long it should be pared from the bottom of the foot; but never permit the toe to be cut off from the front, giving the foot the appearance of being "stubbed toed". Four or five weeks is as long as a shoe ought to remain on the foot without being re-set, and the hoof properly pared. The shoe should be no longer than is necessary for the hoof to rest. The nails should be driven well up, the clinches made smooth, but the enamel should in no case be rasped from the hoof. There is one evil which prevails to a considerable extent, es-

pecially among livery men, viz: the shoeing of horses with plates, instead of using calkins. This custom seems to have originated in the fact, that running and trotting horses are shod with plates. The reason that owners of fast horses use plates instead of calkins, is, that calkins detract from the speed of their animals. It must be borne in mind however, that race horses are used on soft tracks and do not get much exercise in the mud. Other horses are used mostly on hard roads, and in all kinds of weather. However hard the roads, small, low calkins will make more or less indenture in the ground, which prevents concussion to a certain extent, consequently the animal after a hard drive will not exhibit the same amount of soreness which is often times noticed when shod with plates. Fast driving on dry hard roads with plates, always has a tendency to make a horse feel sore and stiff, from the concussion, caused by the whole surface of the foot coming in contact with the hard ground, without any spring or elasticity which exists where small, low calkins are used. Besides, when the roads are muddy, plates will slip and slide about, without any sure footing: often causing a splint, curb, or spavin to be thrown out which might be avoided by the use of calkins.

Phrenitis.---Inflammation of the Brain.

This disease is essentially the same as inflammation affecting serous membranes in other situations; but owing to the unyielding bony case which contains the brain, a small amount of effusion and exudation is vastly more serious than a much larger amount in other situations. The exciting cause of this disease is oftentimes obscure. Some writers are of the opinion that the majority of cases are caused by keeping the animal exceedingly fat, by overworking them, and then by suffering them to eat voraciously until their stomachs are preternaturally distended. The writer has seen cases ushered in by sudden cold.

Symptoms.—The horse is a little off his feed—he is more than usually dull—and generally, there is a certain degree of stupidity about him. The actual illness is perhaps first recognized by the horse standing with his head depressed. It bears upon, or is forced against the manger or the wall. As he thus stands, he is balancing himself from one side to the other as if he were ready to fall: and it is often dangerous to stand near him, for he falls without warning. The next moment he may be on his feet again—his head in a corner, pressing against

the wall—the eyes wild and staring with an unmeaning glare, the breathing laborious and loud, the nostrils dilated, and their lining membrane a deep scarlet hue. He now begins to foam at the mouth. The pulse is quick and wiry, he grinds his teeth, twitchings steal over his face and attack his limbs. They sometimes proceed to convulsions, and dreadful ones too, in which the horse beats himself about in a terrible manner; but there is rarely a disposition to do mischief.

Treatment.—In a case of evident phrenitis, blood-letting and physic should be carried to a considerable extent. Open the juglar vein and abstract from two thirds of a pail full, to a pail full of blood. Give Fluid Extract of Gelseminum in one dram doses every half hour, until the patient is quiet. Then administer the following drench:—Castor Oil ½ pint, Croton Oil 30 drops, *well shaken.* Give 10 drops Tincture Arnica every hour, thirty minutes after giving the Arnica, give 10 drops fiuid extract Gelseminum. Continue this treatment, giving the two remedies alternately every 30 minutes until the horse is quiet, and the pulse drops to its normal frequency, which is about 40 beats in a minute. Then give the drops once in two or three hours until recovery.

Give water to drink in small quantities, as often as the patient will drink it. Give no food for a few days except thin corn meal, or oat meal gruel. For several days after convalescence, feed no grain but warm bran-mash.

The most of the Veterinary writers speak very discouragingly about the successful treatment of this disease; but by following the above treatment for a long term of years, our success has been all that we could wish. The patient requires close attention from the first attack until convalescence, and should in no case be left without an attendant, night or day. Tie the animal high, with a stout halter to prevent throwing and injury.

String-halt.

String-halt is the imperfect development of that form of disease which, in man or dogs, is called chorea, or St. Vitus's dance. In dogs it jerks the whole body, even to the face. In the horse however it is seen only in the hind extremities, While in the dog it often terminates in death, yet in the horse it never proves fatal.

Professor Spooner, of the Royal College of Veterinary Surgeons, reports a case of string-halt, wherein he found after death, an effusion

of blood on the sheath of the sacro-sciatic nerve. That however could not have influenced the motion of the limb, as that nerve moves the flexor muscles, while string-halt is a disease of the extensor muscles only, and the condition of the nerve alluded to by Prof. Spooner could in no way influence the motion of the limb.

Profs. Percival and Goodwin cite cases where animals affected with string-halt, pressure existed upon the posterior portion of the spinal column. A spicula of bone pressing on the spinal column produces string-halt, which lasts during the lifetime of the animal. No cure can be effected, as no drug can reach the seat of the disease.

Simple Opthalmia.

Simple Opthalmia is inflammation of the fine membrane which covers the horse's eye ; it reaches no deeper, it does not affect the internal structure of the organ, and it is not so much to be dreaded in its immediate as in its after consequences.

Treatment.—Give the horse warm bran-mash for a few days to loosen his bowels, and wash the eye three or four times a day with the following lotion :

Sulphate of Zinc, - - - -	10 grains.
Fluid Extract of Matico, - - -	1 dram.
Rain Water, - - - -	½ pint.

Filter, or strain through a fine linen cloth. Give the horse perfect rest for a few days.

Lampas.

This is an imaginary disease, which requires no other treatment than to give the horse warm bran-mashes for a few days, and if the bars of the mouth are much inflamed, start a few drops of blood with a lance or a sharp pocket knife. Draw the edge of the knife lightly across the bars in several places; only cut deep enough to just start the blood. In a few days all inflammation will disappear. Never permit the cruel and barbarous practice of burning the mouth for the lampas.

Quidding.

Many horses are seen to drop the hay from their mouths before it is properly masticated. Especially is this the case with aged horses. If the mouth be examined, it will be found that the molar teeth, or grinders, are worn slanting, like a pair of shears. The outside of the upper, and the inside of the lower teeth will be found as sharp as needles. The sharp edges of the teeth wound the inside of the cheeks and the tongue, and cause a disinclination to eat, and provoke a dribbling of salivia.

Treatment.—A tooth-rasp should be procured, and the sharp uneven edges of the teeth should be filed until the difficulty is obliterated.

Oftentimes a decayed tooth will be found. Then the animal will be likely to suffer from the toothache, the same as a human being. In this case the tooth should be extracted.

Cold.

No one should be surprised that the horse, being exposed to every abuse, should occasionally be subject to a disease which, in man, is of an every-day occurrence. Usually the animal exists in a stable kept hot by contaminated atmosphere; it is taken thence into the wintery atmosphere; driven at a rapid rate to the nearest town; its sides bedewed with prespiration; it is left standing at the hitching post for hours with not even a blanket to shield it from the wintery winds. The owner after eating a warm meal and transacting other business, unhitches his team and starts for home. Arriving there, he leads his horse to the well, gives it all the cold water it will drink; puts it in the stable; fills the rack with hay; empties the corn or oats in the feed-box, and leaves it until morning, and gives it no further thought. In the morning he finds the grain untouched; the horse shivering; the coat is rough; the body is of unequaled temperature, hot in parts, in places icy cold. The nasal membrane dry and leaden-colored; the pulse hard and wiry; the head aches and hangs in the manger; the appetite has fled; tears trickle from the eyes; at length a copious discharge falls from the nostrils.

Treatment.—Cover the patient with blankets; rub the limbs briskly; give on the tongue 10 drops Tincture Aconite Root, every 30 minutes until the pulse softens down, and the patient is warmer;

then give the aconite once every two hours until a cure is affected. Give every night and morning one of the following powders:

Tartar Emetic, - - - - - -	1 ounce.
Chlorate of Potassa, - - - - - -	1 ounce.

Pulverize the Chlorate of Potassa and thoroughly mix. Divide into twelve powders. Give perfect rest for a few days, and feed no grain. Feed warm bran-mashes with a little salt added. Remove the chill from the water and give as often—in small quantities—as the patient desires it. After convalescence give gentle exercise daily, gradually increasing to the usual labor.

Chronic Catarrh and Ozena, or Nasal Gleet.

Any mucous discharge from one or both nostrils, continuing for any great length of time, is usually termed Nasal Gleet. A term to the untutored, analagous with Glanders. While Glanders may very properly be termed Nasal Gleet, yet an animal may have a chronic discharge from the nostrils for years and still have no glanders.

Usually, Veterinary writers in classifying disease, make a distinction between Nasal Gleet, Chronic Catarrh, Ozena, etc., claiming them to be distinct and separate diseases. The term Nasal Gleet signifies a chronic mucous discharge from one or both nostrils, but fails to serve as a true guide to the disease in question. A careful diagnosis (study of the symptoms) is essential to enable us to successfully treat any disease, especially this one.

When we find fetid ulcers in the nose, accompanied with caries of the bones, and involving the frontal sinus, the antrum, (cavity in the bones) and the adjacent structure, we have a case of Ozena. This disease may be caused by the projection of a molar tooth, causing irritation; by a blow or kick upon the frontal bones, and it is not an infrequent consequence of epidemic catarrh. If the disease is caused by a projecting tooth, the tooth should be extracted at once; and the treatment hereafter prescribed for chronic catarrh should be followed: but in this case, as well as where the disease is caused by a fracture of the frontal bones, it is usually necessary to resort to the Trephine, which will require the services of an experienced Veterinarian, and then, success is not always certain.

The symptoms of chronic catarrh, are, a profuse mucous discharge

from one or both nostrils, the nasal membrane livid, the glands between the jaws usually enlarged, and the parotid gland (extending to the ears) is sometimes considerably enlarged. In some cases the coat stares, the legs swell considerably, the appetite more or less affected, and the animal unusually dull. In other cases the appetite is not affected and for months the animal may be in his usual spirits. This disease may be the consequence of a neglected cold, or it may be the sequelæ of Influenza, or strangles, (called in the United States. Horse Distemper.)

Treatment.—Feed twice a day bran-mash, and once a day, oats. If the patient has a cough, sprinkle the hay with water. If the weather is cold, keep the body warm with blankets. Keep the nose washed clean by means of a sponge or cloth. Give every night and morning in the bran-mash one of the following powders:

Tartar Emetic, - - - - -	1 ounce.
Chlorate of Potassa, - - - - -	1 ounce.
Hyposulphite of Soda, - - - -	1 ounce.

Powder fine and thoroughly mix, and divide into twelve powders, and give as above. At noon give in the oats, one ounce of the following:

Tincture Chloride of Iron, - -	10 ounces.
Fowler's Solution of Arsenic, - -	6 ounces.

Mix, and put one ounce into one pint of water and mix with the oats.

When the above treatment has been pursued one week, discontinue for one week and give the following for one week:

Bi-chromate of Potassa, - - -	1 dram.
Rain Water, - - - - -	1 pint.

Powder the potassa, mix, and when thoroughly dissolved, give one dram three times a day, on the tongue. Change this treatment every week, according to above directions. Inject the potassa mixture into the nostrils once each day; one ounce to each nostril affected. Use the following liniment for the enlargement on the throat.

Kerosene Oil, - - - -	8 ounces.
Raw Linseed Oil, - - -	8 ounces.
Oil Hemlock, - - - -	4 ounces.
Gum Camphor, - - -	2 ounces.
Aqua Ammonia Concentrated; - -	½ ounce.

Mix. Rub this on the enlargement with the hand thoroughly, twice a day. If this should fail to diminish the enlargement after several days, then use the following:

Deuto-Iodide of Mercury, - - -	2 drams.
Fresh Hog's Lard, - - - -	2 ounces.

Mix well together to form an ointment. Rub on the enlargement once a day, enough to make a ball about the size of a Hickory nut. This should produce quite an irritation. Do not blister, as blistering will prevent absorption.

Gentle exercise is far better each day, than perfect rest. With the above treatment we have usually perfected a cure in from four to eight weeks, in ordinary cases. Some cases may require more time.

Chronic Cough.

Any cough may become chronic by neglect. Cough is too often caused by unhealthy lodging, or by musty hay and grain. Sometimes it is caused by worms: again it may the relics of a badly managed case of Pneumonia.

Treatment.—Sprinkle your hay and grain: clothe warm; give one feed of oats each day, and two feeds of warm bran-mash well salted: remove the chill from the water, and give the following:

Fluid Extract Belladonna, - - -	2 drams.
Balsam Copavia, - - - -	1 ounce.
Balsam Fir, - - - - -	1 ounce.
Sweet Spirits Nitre, - - - -	1 ounce.
Syrup Ipecac, - - - - -	1 ounce.
Simple Syrup, - - - -	2 ounces.

Mix, and give one tablespoonful every three hours on the tongue.

Should the above fail to give relief, and should worms be suspected as the cause, give the following:

Tartar Emetic, - - - - - -	1 ounce.
Chlorate of Potassa, - - - -	1 ounce.
Wormseed, - - - - - -	1 ounce.
Powdered Copperas, - - -	1 ounce.
Powdered Elecampane, - - -	1 ounce.
Powdered Licorice, - - -	1 ounce.
Powdered Gentian, - - - -	1 ounce.

Mix, and give one even tablespoonful in the bran-mash twice a day.

Pneumonia.--Inflammation of the Lungs.

Symptoms.—When acute pneumonia occurs, it is rather lingering in its development; the breathing is labored and slightly accelerated; the pulse is less increased than would be expected; the artery is full, and the beat seems driven by some hidden force through a gelatinous obstacle; it bulges out, and then all is still for an interval, after which the operation is repeated. The horse has lost all spirit; indeed, a considerable portion of its consciousness has evidently departed; it stands as though from giddiness it feared to fall; its legs are separated and strained outward to the farthest limit. The head and ears are dejected; the coat rough, the extremities cold, the body without warmth; the visible membranes discolored, and the bowels cositive; in fact the animal appears oppressed by some heavy misfortune. Feeling seems half dead; thus we are warranted in imagining that the attack has embraced all the component structures of the lungs, and that it consists in no small degree of congestion. The horse with decided pneumonia can scarcely be induced to move. He cannot spare for a moment the assistance which he desires from certain muscles, and he will continue obstinately to stand until he falls exhausted or dying. When the patient wearied out, lies down, it is only for a moment, for if the inflammation is not subdued, he can not dispense with the auxialiary muscles; the inspiration being lengthened, and the expiration so rapid, and the lungs not being compressed by the usual means, every muscle that can be brought to bear upon the part, must be called into action. He frequently, and

with doleful expression looks at his sides : the head is protruded, and the nostrils extended, and the mouth and breath intensely hot. The nose is injected from the earliest period ; and soon afterward there is not merely injection, but the membrane is uniformly and intensely red. The unfavorable symptoms are, increased coldness of the ears and legs; partial sweats, grinding of the teeth, evident weakness, staggering, the animal not lying down. The pulse becomes quicker, and weak and fluttering ; the membrane of the nose paler, but of a dirty hue; the animal growing stupid, comatose. At length he falls, but he gets up immediately. For a while he is up and down almost every minute, until he is no longer able to rise: he struggles severely; he piteously groans; the pulse becomes more rapid, fainter, and he dies of suffocation. The vessels ramifying over the cells, have yielded to the fearful impulse of the blood, and the lungs have presented one mass of congestion. The writer has witnessed cases where the animal stood in one position, without scarcely moving, for nearly two weeks, then dropped dead, without even a struggle.

The favorable symptoms are, the return of a little warmth to the extremities, the circulation beginning again to assume its natural character, and next to this, the lying down quietly and without uneasiness; showing us that he is beginning to do without the auxialiary muscles. These are good symptoms, and they will rarely deceive.

In every case of pneumonia, early and anxious recourse should be had to auscultation, (listening to the sound of the lungs.) If the reader is not familiar with the deep, distinct murmur of the healthy lung, let him hold his ear to the chest of a healthy horse. Then he will make himself best acquainted with the respiratory murmur in its full state of development. When he has familiarized himself to the natural sound, let him place his ear to the chest of the diseased animal ; and if pneumonia exists to any considerable degree, he will find this murmur has been changed for, or mingled with a curious crepitating sound, which having been once heard, cannot afterward be mistaken. It is caused by the infiltration of blood into the air-cells. Its loudness and perfect character will characterize the intensity of the disease, and the portion of the chest at which it can be distinguished will indicate its extent.

Treatment.—Too much care cannot be taken of the patient laboring under this disease. He should at once be removed to a roomy stall; the floor covered wtth clean dry straw or hay; his legs should be well hand-rubbed, in order to restore if possible, the circulation

to the extremities. Flannel bandages should be applied to his legs, from the foot to the knee. He should be well clothed; and as for air, in warm weather he cannot have too much. In cold weather his box must be airy, but not chilly. We want to determine the blood to the extremities and the skin, but all the clothing in the world will not keep our patient warm if he is placed in a cold and uncomfortable situation.

As for food, we need not think of it, for in ninety nine cases out of a hundred he will not touch anything. Should he be inclined to eat, give nothing but warm bran-mashes, or corn meal gruel. Keep a pail of fresh water continually within easy reach. At the commencement of the attack, give 10 drops Tincture Arnica, or Veratrum Veride on the tongue. In 15 minutes give 10 drops Fluid Extract Gelseminum, changing from the Arnica to the Gelseminum every 15 minutes until the breathing is easier. This will usually take place by the time six or eight doses have been given. Now give the drops once an hour; giving them alternately, until convalescence takes place.

Rub on the chest, and on the side affected, and if both lungs are implicated, rub on both sides, back of the fore legs, the following sweating blister:

Spirits Turpentine, - - -	4 ounces.
Strong Cider Vinegar, - -	4 ounces.
Water, - - -	8 ounces.
Ground Mustard, - - -	4 ounces.

Mix and rub on thoroughly with the hand. Repeat in two hours if the first application failed to draw a blister.

Should the case prove to be an obstinate one, and the symptoms not yielding readily to the above treatment, give the following:

Tartar Emetic, ...	½ ounce.
Powdered Digetalis, ...	2 drams.
Powdered Nitrate of Potassa, ...	1 ounce.

Mix, and divide into twelve powders. Give one powder three times a day.

While recovering, the animal for many days, should have no grain,

except warm bran-mashes. Should the patient have much cough, give the following.

Carbonate of Ammonia, ...	1 ounce.
Syrup Ipecac, ...	3 ounces.
Syrup Squills, ...	2 ounces.
Tincture Lobelia, ...	2 drams.
Simple Syrup, ...	4 ounces.

Mix, and give one tablespoonful every two hours, on the tongue.

Bots.

We are indebted to Mr. Bracy Clark, an English Veterinarian, for almost all we know in relation to this parasite; therefore we will give their history in the language of Mr. Clark.

"A species of gad-fly, the *œtrus equi*, is in the latter part of the Summer exceedingly busy about the horse. It is observed to be darting with great rapidity toward the knees and sides of the animal. The females are depositing their eggs on the hair, which adhere to it by means of a glutinous fluid with which they are surrounded. In a few days the eggs are ready to be hatched, and the slightest application of warmth and moisture will liberate the little animals which they contain. The horse in licking himself touches the egg; it bursts, and a small worm escapes, which adheres to the tongue, and is conveyed with the food into the stomach. There it clings to the cuticular portion of the stomach, by means of a hook on either side of its mouth; and its hold is so firm and so obstinate, that it must be broken before it can be detached. It remains there feeding on the mucous of the stomach, during the whole of the Winter, and until the ensuing Spring; when, having attained a considerable size, and being destined to undergo a certain transformation, it disengages itself from the cuticular coat, is carried into the villous portion of the stomach with the food, passes out of it with the chyme, and is evacuated with the dung.

The *larvœ* or maggot, seeks shelter in the ground, and buries itself there: it contracts in size, and becomes a chrysalis or grub, in which state it lies inactive for a few weeks, and then bursting from its confinement, assumes the form of a fly. The female becoming

impregnated, quickly deposits her eggs on those parts of the horse which he is most accustomed to lick, and thus the species are perpetuated.

There are several plain conclusions to be drawn from this history. The bots cannot, while they inhabit the stomach of the horse, give the animal any pain, for they have fastened on the cuticular or insensible coat. They cannot be injurious to the horse, for he enjoys the most perfect health when the cuticular part of the stomach is filled with them, and their presence is not even suspected until they appear at the anus. They cannot be removed by medicine, because they are not in that part of the stomach to which medicine is usually conveyed; and if they were, their mouths are too deeply buried in the mucous for any medicine, that can be safely administered, to affect them: and last of all, in due course of time they detach themselves, and come away".

The writer has a specimen of bots taken from the stomach of a horse, which lived fifty-eight hours submerged in strong alcohol; and sealed air tight. It will be seen by this experiment, that it is much easier to give medicine that will kill the horse, than to kill the bot: even after you take the bot from the stomach. Therefore, the wise man will leave them to themselves, or content himself with picking them off when they collect under the tail and annoy the animal.

There are many men who firmly believe that bots will kill a horse, from the simple reason that after death bots are found in the cavity of the abdomen; having eaten through the walls of the stomach.

Any horse that has had a run at grass, or has stood for hours at the hitching-post where he would be likely to come in contact with the Gad-fly, will have bots in his stomach; but there is no more probability of bots eating through the stomach, thereby killing the horse, than there is of any sane man setting fire to his dwelling house and burning it over his head.

The stomach of the horse is the natural home for the bot. When the animal dies, the bot, by instinct (or some other means unknown to us) seems to realize that they are in confinement; and probably realizing the long arduous mode of exit through the alimentary canal, think to shorten their pathway to the open air by passing through the walls of the stomach. This accounts for bots always being found in the abdominal cavity. The eating is always done after death; never before. But says one, "the stomach was like a sieve, all full of holes." Always bear in mind that the gastric juice, while it does

not affect live animal matter, yet, as soon as death ensues, the juices of the stomach at once takes hold of the walls of the stomach, and in a short time they become dissolved, and then present the porous condition above noticed. It is said by some, that "a horse troubled with bots will turn up the upper lip: look back to his sides; paw with his fore feet: lie down and roll; etc., etc." These are symptoms of some abdominal difficulty. Find out by careful inspection what the difficulty is, then apply the proper remedies; but never treat your horse for bots.

The writer has treated hundreds of horses with above symptoms, that recovered without the aid of any of the so-called "bot remedies," and in fact, he has never given a dose of medicine for bots in his life.

Crib-Biting.

This is more of a habit than a disease. There is no known cure for it. About the best thing that can be done to stop it, is to pierce a strap with several sharp brads or tacks; then buckle it around the horse's throat. This will usually prevent his cribbing as long as you keep it on him. Some Veterinarians recommend keeping plenty of salt and white chalk within easy reach.

If the habit has become confirmed it will probably last during life.

Enteritis--Inflammation of the Bowels.

Enteritis is a fearful disease, creating the greatest possible agony. Its causes, unfortunately, are in a great measure purely conjectural: such as drinking cold water, etc., etc.

If all the animals exposed to the operation of such provocatives were to have enteritis, two-thirds of the horses inhabiting this continent would be dead by to-morrow morning.

The principal thing, therefore, is the predisposition; and any triviality may start up the disease.

A severe fit of colic, long continued or ill-treated, may end in enteritis. This is well known; yet it was not the colic which induced enteritis; but the real cause was that which originated the first affection. The predisposition must be present before the bowels would exhibit that inflammation into which the colic merged; the injudicious and cruel treatment that most horses receive from their masters, may probably be accused as the root of all these evils.

Disease is the loudest proof that the life is stinted in some essential particular. The same food is placed before all horses; one animal will, however, purge upon exertion; labor, on the other hand, may constipate the fellow occupant of the same stable. When the same effect has produced such opposite results, all the bodies cannot be alike. The diet which supports one animal in health, may loosen or constringe its companion: yet we are too ignorant to practically use such distinction.

There is no practice more general than to load the rack and pile the manger after any uncommon toil has been endured. The practice may originate in the best intentions; but no intentions can convert that which is evil into a possible good. The wretched animal is tempted to cram the stomach when excessive labor has weakened the vital functions. The frame being exhausted, rest is far more essential than food; the nourishment then should be very light, and such as can be quickly swallowed. A few quarts of bran made into a thin gruel with warm water; a good rubbing, and a good bed to lie upon, then left alone until morning, would be far better for the horse, than to fill the rack and manger full of hay and oats: for the danger of introducing substances into a stomach dead to its functions would thus be avoided; nothing likely to irritate or to operate as foreign bodies upon the bowels would be set before the debilitated horse. The wish is to sustain a debilitated body, not to blow out an idle stomach.

Constipation, if permitted to exist for any period, is always dangerous; hardened feces (dung) is one of the surest causes of enteritis.

The predisposing cause may in most instances, be difficult to discover; but the premonitory symptoms of enteritis are well marked. It speedily runs its course, and it is of great consequence that its early symptoms should be known.

If the horse has been carefully observed, restlessness and fever will have been seen to precede the attack. In many cases a direct shivering fit will occur; the mouth will be hot, and the nose red. The animal will soon express the most dreadful pain by pawing, striking at his belly, looking wildly at his flanks, groaning, and rolling. The pulse will be quickened and small; the ears and legs cold; the belly tender, and sometimes hot; the breathing quickened; the bowels costive; and the animal becoming rapidly and fearfully weak.

The horse paws and stamps as in colic, but without the intervals of ease that occur in that disease. The pulse is also far quicker

than in colic. The breathing is more hurried, and the indication of suffering more evident.

Treatment.—The treatment of inflammation of the bowels, like that of the lungs, should be prompt and energetic. Place the horse in a large roomy stall or box, with a plenty of dry straw; give the following: Sulphate of Morphia, 5 grains. Repeat every three hours if necessary to quiet pain. Give on the tongue 10 drops Tincture Aconite root. Throw up injections of warm water (three or four quarts) every hour. A horse suffering from inflammation of the bowels, will at intervals nibble away at the hay if there is any within his reach. The stomach and intestines are in no condition to digest food, consequently this will prove a source of irritation. Therefore, one of the first things to be done, is to remove all hay or straw from the manger. Offer the patient water (from which the chill has been removed) quite often. When the disease abates so that the patient manifests any disposition for food, offer him corn-meal or oat-meal gruel, which has been prepared with the same care that an efficient nurse would prepare it for the sick room. If it is palatable to the human being, it may be relished by the horse.

After convalescence, judgement must be exercised with regard to diet. For many days the bowels will be tender, and in no condition to receive the usual food. Therefore, gruels, warm bran-mashes, boiled oats, or some other equaly light food (easy of digestion) only, should be administered.

During the disease, clothing should be used to keep the body warm; the legs should be well rubbed and bandaged with flannel; as our success will depend on keeping the blood circulating freely in the extremities.

Should the Abdomen be very tender and hot, much good may be accomplished by applying hot fomentations. A very good way to do this, is to put a large blanket into hot water, wring out the water, double it and place it around the loins; cover it with a dry blanket, and hold them in their place by a surcingle around the loins. The patient should not be left alone, but should have a faithful attendant night and day until convalescent.

Ascites.---Dropsy of the Abdomen.

Symptoms.—The symptoms which announce that the serous membrane has effused water into the abdomen are, a want of spirit;

constant lying down and remaining in one position for a long period; perpetual restlessness; thirst; loss of appetite; weakness; enlarged abdomen; constipation and hide-bound. At length small bags containing fluid, depend from the chest and the inferior surface of the belly. Should the disease be suffered to progress, the sheath and one leg generally enlarge: sometimes there is an enlargement of both legs; and the writer has seen cases where all of the legs were enlarged to enormous dimensions.

By hard, prolonged pressure upon the legs with the thumb and fingers, the fluids are forced aside, and deep indentures are left, which will remain for several minutes. The hair of the mane and tail breaks off, and is easily pulled out.

Treatment.—In treating this disease it is necessary to give a hydragogue cathartic; for the purpose of removing as much of the watery fluids as possible. Therefore give the following drench:

Raw Linseed Oil, - - - -	1 quart.
Croton Oil, - - - -	30 drops.

Mix. Shake together thoroughly until the oils are well blended, and give at one drench.

Should there be any fever, give once an hour 10 drops tincture aconite root, on the tongue until the fever abates.

It is necessary that the patient should have several copious discharges; but should the physic continue to operate for more than forty-eight hours, check by giving the following;

Laudanum, - - - - -	1 ounce.
Sulphuric Ether, - - - -	1 ounce.
Water, - - - - -	½ pint.

Repeat the above every two hours until the bowels are checked.

Now it will be necessary to do something to build up the debilitated system: and at the same time we should bear in mind the excretory organs, (the skin, liver and kidneys) which will require assistance to enable them to perform their proper functions.

The diet should consist of good bright hay; one feed of oats each

day, and two feeds of bran-mash. Every morning and night give in the bran-mash, one of the following powders:

Calomel, - - - - -	2 drams.
Podophyllin, - - - -	1 dram.
Powdered Gentian, - - - -	1½ ounces.

Mix, and divide into twelve powders. Give one powder every night and morning as above. Give once a day in the oats the following:

Chloride Tincture of Iron, - - -	10 ounces.
Fowlers' Solution, - - -	6 ounces.
Sweet Spirits of Nitre, - - -	5 ounces.

Mix, and put one ounce in one pint of water and stir into the oats and give as above. This last mixture should be given once a day until the animal finally recovers.

Since the Epizootic epidemic of 1872, there has been a strong tendency to a dropsical condition among a large number of horses. This often manifests itself in an œdematous condition of one or both of the hind legs. This may very properly be called "Dropsy of the cellular tissues." The leg or legs will usually present an enlarged appearance in the morning, and by exercise the swelling will disappear. This will continue for a time, when it will be noticed that exercise does not seem to remove the enlargement only to a limited extent.

The legs gradually increase in size: the size however, varying according to the amount of exercise. The swelling is hard to the touch, but upon constant pressure the fluids seem to separate and leave an indenture which will remain for considerable time.

The same functional disorder which produces ascites is very probably the exciting cause of this complaint. The last recipe given above for ascites usually effects a cure in this complaint, in from ten to twelve weeks. The remedy should be given every day without intermission until the legs assume their natural proportions. This disease is sometimes called "Big-leg", and if permitted to run its course, the animal may in a short time become an unsightly object.

Influenza, or Epidemic Catarrh.

In October, 1872, when this disease made its appearance in the State of New York, (and in the course of a few weeks spreading over the greater portion of the American Continent, destroying thousands of the equine race) it was supposed by many to be a new disease; and people wondered that veterinary skill could discover no remedies that would check its fearful ravages.

Many able veterinarians had never seen a case; and many *calling themselves* "Horse Doctors", had never heard of such a disease, and in consequence they knew not what to do for it. Under these circumstances, is it any wonder that the people stood aghast, while their favorite slaves were cut down by hundreds and by thousands?

Prof. George B. Wood, in writing of this disease in 1847, says: "The first epidemic of this kind, of which we have any distinct medical record, occurred in the year 1510. There can be but little doubt, however, that it has occasionally visited mankind from the earliest ages. Since the year mentioned, we have numerous records of its occurrence at irregular intervals, down to our own times.* * *

"In general it is very mild; but on some occasions it has proved extremely fatal. * * * *

"Many instances are on record, in which horses, dogs, sheep, and even birds have been siezed by the epidemic. * * *

"In the year 1580, more than nine thousand persons died with it in the city of Rome." * * *

Says Prof. Youatt. "In 1714, this malignant epidemic was imported from the Continent, and in the course of a few months destroyed 70,000 horses and cattle. It prevailed in 1815, and three horses out of five attacked died.

It reappeared in 1823, but was not so fatal."

In a work by Prof. W. C. Spooner on this disease, we find the following:—"The influenza very extensiely prevailed as an epidemic in this country, (England) in the years 1836 and 1840. The symptoms in 1840 were very similar to those of the epizootic of 1836, sufficiently so as to justify us in denominating it the same disease."

This disease is both *epidemic* and *endemic*, sometimes raging over large districts so that scarcely a stable escapes, and at others being confined to a neighborhood.

Some writers claim that this disease is clearly attributable to atmospheric influence; also that it is contagious beyond a doubt.

These notions are contradicted by the fact, that the disease has occurred under all possible varieties of appreciable atmospheric condition, at all seasons, in all weather, and at the same moment in distant places, differing wholly in climate and the state of the atmosphere at the time.

A contagious disease usually attacks some one individual in a family, and after a certain interval extends to others. Influenza commonly runs through the stable in which it appears; but it does not invariably attack every animal within the building. Sometimes it will seize the horse nearest the doors, then travel to the stall farthest from the entrance; thus it skips about without regularity, and often spares many individuals.

Contagious affections communicated through the atmosphere usually occur but once. An attack of influenza is no security against subsequent attacks. Since the epidemic of 1872, the disease has reappeared in different localities, in each succeeding year; in many instances the same animals being attacked three or four times.

After a careful analysis of the various theories advanced by the different writers on the cause of this disease, we are compelled to confess our ignorance on this point, and are constrained to wait patiently until we can obtain new light.

Symptoms.—In influenza there is no difficulty in pointing to the structure affected. It would be hard to allude to the part which was not involved. The weakness and stupidity which accompany the affection declare the brain and nervous system diseased. Local swellings show the cellular tissue to be deranged; heat and pain in the limbs and joints announce the serous, the ligamentous, and osseous (bony) structures implicated. The muscular and digestive functions are acutely disordered; the rapid wasting of the flesh, demonstrates that the absorbents are excited. There is no portion of the body which can escape the ravage of influenza.

The other symptoms (which, however, are very uncertain as regards any of them being present or absent) are, pendulous head, short breath, inflamed membranes, swollen lips, dry mouth, enlarged eyelids, copious tears, sore throat, tucked up flanks, compressed tail, filled legs, lameness and hot feet. Auscultation may detect a harsh, grating sound at the chest. Whenever this sound is heard, there will usually be a copious nasal discharge.

Treatment.—Move the horse to a well littered, loose box. If the case is an extravagant one, no food will be eaten; but suspend a pail

of well-made gruel within easy reach of the animal's head. In less extravagant cases where the appetite is not wholly lost, warm bran-mash or boiled oats may be given three times a day. If there is any cough, the hay should be sprinkled with water, to remove the dust. The discharge from the nostrils should be washed off several times each day; as cleanliness is a very important adjunct to medical treatment in all diseases. Prepare the following:

Powdered Chlorate of Potassa, - -	1 ounce.
Antimony Et. Potassia Tartras, - -	1 ounce.
Hyposulphite of Soda, - - -	2 ounces.

Mix, and divide into twelve powders. Give one powder each night and morning, mixed with syrup and placed on the tongue.

Tincture Aconite Root, - - - -	½ ounce.
Fluid Extract Belladonna, - - -	½ ounce.

Mix; and give 10 drops on the tongue every two hours.

A volatile liniment should be used as a local application to the throat twice daily. Compound as follows:

Spirits Turpentine, - - - -	2 ounces.
Aqua Ammonia f. f. f., - - - -	2 ounces.
Raw Linseed Oil, - - - -	2 ounces.

Mix. Rub on the throat and between the jaws with the hand. To be well shaken before each application.

With the above treatment the writer has trealed six hundred and twenty-seven cases; only one case proving fatal.

If the disease should make its appearance in cold weather, the chill should be removed from the water; the body should be kept warm by the aid of blankets, and hand-rubbing and flannel bandages applied to the legs. In all cases, give the animal perfect rest until convalescent.

Worms.

Worms are of various kinds; and oftentimes are the source of con-

siderable intestinal irritation. Those which seem to cause the greatest annoyance to the horse are, the Ascarides and the Strongulus. They produce extraordinary ravages, notwithstanding their insignificant appearance. They inhabit the large intestines, and are sometimes difficult to eradicate, because of the extent of the bowels which they infest. The Strongulus will sometimes eat through important structures, but the Ascarides are always located within the rectum; therefore, it is usually considered proper to give injections of oil, in connection with other remedies, as most medicines are deprived of their activity, and are inoperative before they reach this locality.

TREATMENT.—Feed generously with bran-mash, boiled oats, etc.: but feed sparingly with hay. Give every morning and night the following mixture:

Powdered Sulphate of Iron,	2 ounces.
Powdered Gentian,	2 ounces.
Wormseed,	2 ounces.
Tartar Emetic,	2 ounces.
White Sugar,	4 ounces.
Calomel,	1 ounce.

Mix thoroughly, and give in warm bran-mash one tablespoonful at a dose according to above directions.

After giving the above mixture three or four days, give the following mixture as one injection:

Raw Linseed Oil,	4 ounces.
Spirits Turpentine,	1 ounce.

This is to be thrown well up the rectum.

Spasmodic Colic.

That affection which in ladies is designated spasms, in gentlemen is called pain in the bowels, and in children is known as the belly-ache, is, in the horse, colic; and from the largeness of the animal's intestines, the affection probably provokes more anguish in the

quadruped than the same disorder does in the entire human race. Under whatever term it may be recognized, spasmodic colic is never more than a partial contraction of the muscular coat of the intestines. The action so compresses a part of the tube as to expel the blood and render the natural pink of the tissues, for some time after the disorder has departed, a glistening white. The blood, driven from particular spots, is forced into those parts in which no disease exists. Excess of blood predisposes to inflammation; hence we probably trace the reason why, if spasmodic colic be suffered to continue, the affection is apt to end in incurable enteritis (inflammation of the bowels.)

Symptoms.—The attack of colic is usually very sudden. There is often not the slightest warning. The horse begins to shift his posture, look round at his flanks, paws violently, strikes his belly with his feet, and crouches in a peculiar manner, advancing his hind limbs under him; he will then suddenly lie, or rather fall down, and balance himself on his back, with his feet resting on his belly. The pain now seems to cease for a little while, and he gets up, and shakes himself, and begins to feed; the respite however, is but short, the spasm returns more violently, every indication of pain is increased, he heaves at the flanks, breaks out into a profuse perspiration and throws himself more recklessly about.

In the space of an hour or two, either the spasms begin to relax and the remissions are of longer duration, or the torture is augmented at every paroxysm; the intervals of ease are fewer and less marked, and inflammation and death supervene. The pulse is but little affected at the commencement, but it soon becomes frequent and contracted, and at length is scracely tangible.

Treatment.—Fortunately we are acquainted with several remedies that will allay these spasms; and the disease often ceases almost as suddenly as it appeared. The following has been given many times with success:

Sulphuric Ether, - - - -	2 ounces.
Chloroform, - - - - -	2 ounces.
Tincture of Opium, - - -	2 ounces.

Mix, and give one-third of the above in one pint of water. Repeat in one half hour if necessary. The best remedy that can be used for this disease, in our opinion, is Sulphate of Morphine, 5 grains dis-

solved in a tea-spoonful of water, then given at one dose. Repeat if necessary in one hour. This treatment has never failed to give relief in every case when I have used it. Feed warm bran-mashes for a few days and remove the chill from the water. When convalescence occurs after any disease, it will be proper to give for a few days some of the ALTERATIVES mentioned in the back part of this book.

Tympanitis.---Flatulent or Windy Colic.

This is altogether a different disease from the former. It is not a spasm of the bowels, but inflation of them from the pressure of carbonic acid or sulphurated hydrogen gas; generated by the decomposition of indigested food. Whether collected in the stomach, or small, or large intestines, all kinds of vegetable matter is liable to ferment. In consequence of this fermentation, gas is evolved to a greater or less extent, perhaps to twenty or thirty times the bulk of the food. This may take place in the stomach; but it usually takes place in the colon and cœcum, (two of the large intestines) and the distention may be so great as to rupture either the one or the other, or sometimes to produce death without either rupture or strangulation, and that in the course of from four to twenty-four hours.

SYMPTOMS.—The symptoms, according to Prof. Stewart, are, "the horse suddenly slackening his pace, preparing to lie down, or falling down as if he were shot. In the stable he paws the ground with his fore feet, lies down, rolls, starts up all at once and throws himself down again with great violence, looking wistfully at his flanks, and making many fruitless attempts to void his urine". Hitherto the symptoms are not much unlike spasmodic colic, but the real character of the disease soon begins to develop itself. It is in one of the large intestines, and the belly swells all round, but mostly on the right flank. As the disease proceeds, the pain becomes intense, the horse more violent, and at length death closes the scene.

TREATMENT.—Injections of warm water should be thrown up the rectum from the start; repeating as often as every thirty minutes. From half to two-thirds of a pail-full should be thrown up at each injection. Give the same treatment as recommended for spasmodic colic. One or two doses of the morphia are usually all that will be required, if treatment is commenced in season.

Nephritis.---Inflammation of the Kidneys.

Symptoms.—The symptoms of this disease are a hard quick pulse: short breathing, pallid mucous membranes, frequently looking toward the seat of anguish; head depressed, back roached, hind legs straddled, and the urine scanty. The animal almost refuses to "come round" in its stall, seldom lies down, and crouches beneath pressure when made upon the loins.

Subsequently, as the symptoms alter, pus or matter may subside in the water. It is indicative of an unfavorable termination, should a fetid odor attend the secretion, and should it be deeply tinted by the blood.

Treatment.—The treatment of nephritis consists in applying warm fomentations to the loins. This may be done by folding woolen blankets in water as warm as the animal can bear without scalding. Place them over the loins, and cover with dry blankets. Should the case be urgent, the following sweating blister may be well rubbed on the loins before the application of the blanket.

Spirits Turpentine,	4 ounces.
Strong Cider Vinegar,	4 ounces.
Water,	8 ounces.
Ground Mustard,	4 ounces.

Injections of warm water should be thrown up the rectum every hour, as these are the nearest approach that can be made to actual fomentation. The bowels should be opened by a gentle laxative: and for this purpose give one quart of raw linseed oil.

Give every hour ten drops tincture aconite root on the tongue.

The food should consist of warm bran-mash, or linseed gruel. The horse should be kept warm by the free use of clothing; the limbs should be hand-rubbed frequently, and bandaged with flannel.

Great care should be taken that no drugs should be given that would excite the already diseased parts. No Nitre or other diuretics should be given.

Mange.

This troublesome disease is very similar to the itch of the human being.

Mange depends upon the presence of an insect which is classed with spiders, though to the uninitiated it looks under the microscope, like a deformed crab.

Symptoms.—In the majority of cases this disease first appears in the mane, among the hairs of which a quantity of loose, dry scurf is perceptable. Before such a sign however, is to be recognized, excessive itchiness is exhibited. The disease soon extends to the head, to the neck, to the withers, to the sides, to the loins, to the quarters, and in some cases to the legs. As the disorder proceeds, the hair falls off, leaving vacant places upon the body; these have a peculiar, dry, acrid and irritable appearance; they suggest that portions of the body have been scorched with quick-lime, so irregular, patched and scabby are the parts just referred to.

The above are the more obvious indications of mange. However should the diseased locality be more minutely inspected, a number of small pimples are discerned; these elevations are clustered upon different spots. As they mature, the point of each contains a very slight quantity of gelatinous fluid; the vesicles ultimately burst; the contents exude and become dry through the absorption of the atmosphere, forming incrustations upon the surface.

The disease is contagious, and the diseased animal should at once be removed from his fellows. The same comb and brush should in no case be used upon a healthy animal, that is used on one afflicted with mange.

Treatment.—Wash the patient once a day with the following:

Rain Water, - - - -	1 gallon.
Carbolic Acid, - - - -	1 ounce.

Mix.

Give once a day in warm bran-mash, the following:

Murriate Tincture of Iron, - - -	10 ounces.
Liquor Arsenicalis, - - -	6 ounces.

Mix. Dose one ounce put in one pint of water and mixed in the food. Feed with nourishing food, and groom well each day.

Grease.

This filthy disorder is a disgrace to every person concerned with

the building in which it occurs. It proves neglect in the proprietor, want of fitness or positive idleness in the groom, and culpable ignorance or the absence of the slightest moral courage in every one who has anything to do with the stable

The first appearance of grease is usually a dry and scurfy state of the skin of the heel, with redness, heat and itchiness. If the disease is permitted to run its course, deep cracks will soon appear, with an ichorous discharge, and considerable lameness will be exhibited. After the chaps or cracks have healed, the legs will sometimes become gorged and swollen. In some cases the cracks are not confined to the center of the heels, but spread over them, and extend on the fetlock, and even up the leg, while the legs are exceedingly swelled, and there is a watery discharge from the cracks, and an apparent oozing through the skin at other places. The legs are exceedingly tender and sometimes hot, and there is an appearance which the farrier thinks very decisive as to the state of the disease, and which the better informed man should not overlook: *the heels smoke*, the the skin is so hot that the watery fluid partly evaporates as it runs from the cracks or oozes through the skin.

Treatment.—The medicines should be confined to mild diuretics, tonics and alteratives. The food should consist of good hay; warm bran-mashes, and boiled oats. Gentle exercise should be permitted each day when the roads are dry, but the animal should be kept out of all mud and water. The stables should be kept thoroughly clean; and the animal well groomed. Give once a day the following:

Murriate Tincture of Iron, - - -	10 ounces.
Fowler's Solution, - - - -	6 ounces.
Sweet Spirits of Nitre, - - -	5 ounces.

Mix. Put one ounce of the above mixture in one pint of water and stir in the feed once a day. Wash the diseased limb twice a day with the following:

Chloride of Zinc, - - - -	1 dram.
Rain Water, - - - - -	1 quart.

When the watery discharge ceases, discontinue the above wash and use the following:

Spirits Turpentine - - - -	8 ounces.
Raw Linseed Oil, - - -	8 ounces.
Oil Tar, - - - -	2 ounces.
Oil Stone, - - - -	2 ounces.
Tincture Iodine, - - -	1 ounce.

Mix the above in a stone jug, and slowly add, Sulphuric Acid two ounces. Leave out the cork until cold. Shake gently every fifteen minutes. Apply a little to the crack or sores, two or three times a day. The last mixture is all that we ever use for grease, (called scratches in this country) in its first stage.

Cracked, or Chapped Heels.

The last mixture recommended for grease, will affect a cure in a few days, if applied according to above directions.

Broken Wind---Heaves.

In this disease the symptoms are too well known, to require a description here. If emphysema (rupture of the air-cells) has not taken place, a cure can sometimes be affected. We have known of good results being obtained from the following mixture:

Murriate Tincture Iron, - - -	8 ounces.
Iodide of Potassa, - - - -	2 ounces.
Chlorate of Potassa, - - - -	2 ounces.

Mix. Put one ounce of this mixture in one pint of water, and mix with warm bran-mash once a day.

Feed once a day a single handful of sumac berries in the grain, and do not give the horse more than twelve pounds of hay each twenty-four hours. Tie the animal, or muzzle so that he cannot eat the bedding. Water often, but not more than one-half pailful at a time.

Strangles, or Horse Distemper.

This disease is easily recognized by nearly every owner of the horse. In the way of treatment much good can be done to palliate

the disease. As soon as it is noticed that the throat is sore, it will be well to prepare an eight-tailed bandage, and bind on a warm poultice of ground flaxseed or wheat bran. The bandage is made by taking a piece of cloth a yard and a quarter in length, by nine inches in width. Three slits are to be made at either end: each should be a quarter of a yard deep. This is placed round the throat and at the ends tied, four in front, and four behind the ears.

A nose bag should be improvised for the occasion by taking some coarse cloth, (a piece of coffee sacking will answer the purpose.) Make a sack large enough that the air and steam can escape around the nose to prevent scalding. Now place a few quarts of bran or saw-dust in the bag; turn on this two ounces spirits turpentine: then turn in a few quarts boiling water; place the horse's nose in the bag and secure it there by means of a strap fastened over the head. This steaming should be continued until the breathing is easy and natural. To be used at least an hour at a time and several times during the day and night. If the patient will eat, feed with warm bran-mash. Give on the tongue three times a day, two drams powdered Hyposulphite of soda mixed with syrup. Give also the following:

Tincture Aconite Root, - - - -	½ ounce.
Fluid Extract Belladonna, - - -	½ ounce.

Mix, and give on the tongue, ten drops every two hours.

When the tumor on the throat points, or when a soft spot can be found, lose no time in making a free opening with the knife. After the pus has discharged freely, again apply the poultice as before.

Glanders.

This is the most formidable of all the diseases to which the horse is subject. It is a dangerous and infectious disease, and if the poison is introduced into wounds, malignant and gangrenous sores are produced both among men and animals.

Symptoms.—The earliest symptoms of Glanders according to Prof. Youatt, are, "an increased discharge from the nostrils, small in quantity, constantly flowing, of an aqueous (watery) character, and a little mucous mingling with it.

"If a horse is in the highest condition, yet has this small watery

discharge, and especially from one nostril, no time should be lost in separating him from his companions. The peculiar stickiness and gluiness which is generally supposed to distinguish the discharge of glanders from all other mucous and prevalent secretions belongs to the second stage of the disease, and for many months before this, glanders may have existed in an insidious and highly contagious form.

"It is a singular circumstance, for which no satisfactory account has yet been given, that when one nostril alone is attacked, it is, in a great majority of cases, the near or left. In process of time, pus (matter) mingles with the discharge, and then another characteristic symptom appears. Some of this is absorbed, and the neighboring glands become affected. If there is discharge from both nostrils, the glands within the under jaw will be on both sides enlarged. If the discharge is from one nostril only, the swelled gland will be found on that side alone.

"Glanders will frequently exist at an early stage without these swelled glands, and some other cause as catarrh, will produce them. Then we must look out for some peculiarity about these glands, and we shall readily find it. The swelling may be at first somewhat large and diffused, but the surrounding enlargement soon goes off, and one or two small, distinct glands remain, and they are not in the centre of the channel, *but adhere closely to the jaw on the affected side.*

The membrane of the nose will either be of a purplish hue, or almost of a leaden color, or of any shade between the two; or if there is some of the redness of inflammation, it will have a purple tinge: but there will never be the faint pink blush of health, or the intense and vivid redness of inflammation. Spots of ulceration will appear on the membrane covering the cartilage of the nose, not mere sore places, or streaks of abrasion, and quite superficial, but small ulcers, usually approaching to a circular form, deep, and with the edges abrupt and prominent. When these appearances are observed, there can be no doubt about the matter.

"When ulcers begin to appear on the membrane of the nose, the constitution of the horse is soon evidently affected. The patient loses flesh, his belly is tucked up, his hair unthrifty, and readily coming off, the appetite is impaired, the strength fails, cough, more or less urgent, may be heard; the discharge from the nose will increase in quantity; it will be discolored, bloody, offensive to the smell, the ulcers in the nose will become larger and more numerous, and the

air-passages being obstructed, a grating, choking noise will be heard at every act of breathing."

The above symptoms will be sufficient to guide the owner in distinguishing a case of glanders. When he is thoroughly convinced that his horse is glandered, no time should be lost in killing him. *There is no cure*, and the danger to which every person is exposed who comes in contact with a glandered horse, is *too* great to be triffled with. The disease may be checked for a time, and the discharge dried up so that the animal could be disposed of; but the transaction would be a dishonest one, and no honest man would suffer himself to assist in spreading a disease so contagious and so dangerous to life.

The author will not give any form of treatment for this disease.

Farcy.

The name "farcy" is given to such cases of glanders in which the morbid process has its seat in, and immediately beneath the skin, and in which boils (glanders-buboes,) and ulcers of a very infectious and chancrous character make their appearance in the subcutaneous tissue, and in the skin itself. Farcy and glanders are but different types of the same disease; a disease produced by contagion, dependent on a specific poison. A poison for which there is no known antidote.

Symptoms.—The morbid process in this rather frequent disease has its principal seat in the subcutaneous connective tissue, and in the lymphatic system of the skin and the muscles, but especially on the inner side of the hind legs, on the hips, on the neck, between the fore legs, and on all such places where the skin is thin and fine. At first incipient boils or glanders-buboes make their appearance in the subcutaneous tissue. These swellings or boils soon commence to dissolve, or to decay from within, the ulceration begins in the centre, but the matter, being very corrosive, soon works its way into the skin, the boil finally opens, and presents a farcy ulcer with a steatomatous bottom (containing matter like suet) and elevated, corroded and inflamed borders. These ulcers vary in size and form, and have a tendency to generate large ulcers from which spring unsightly bunches of fungoid granulations. The smaller description of this disorder has no preference for any particular locality. It appears in small lumps all over the body. These lumps, from their size and uniformity, have been likened to buttons; hence the term "button

farcy." While the capillary vessels of the arteries are everywhere employed in building up the frame, the absorbents are no less diligently at work in selecting and carrying away every useless or worn-out portion or part of it. There is no surface on which thousands of these little mouths do not open. Opening on the surface of glanderous ulcers, they absorb a portion of the virus secreted by them, and as it passes through the little tubes, they become thickened and inflamed by means of its acrimonious qualities, and hence they receive the name of "corded veins" from farriers, who mistook them for the veins whose courses they follow.

Many claim that farcy has been cured: but the best veterinarians at the present time deny those claims. In our opinion, the only rational treatment of glanders or farcy, consists in the administering at the proper time and place, an ounce of cold *lead*.

Bone Spavin.

This disease is too well known to need any descripion.

Treatment.—When a spavin first makes its appearance, we have often cured them with the following ointment:

Red Iodide of Mercury, - - -	2 drams.
Lard, - - - - -	2 ounces.

The mercury to be thoroughly rubbed in the lard. With a pair of shears clip the hair on the tumor as short as possible. Rub on the tumor, with the finger, a piece of ointment about the size of a hazel-nut once every day. Give the horse perfect rest, and usually a cure can be affected in from four to five weeks.

If the spavin is of long standing use the following:

Venice Turpentine, - - - -	1 ounce.
Powdered Euphorbium, - - -	1 ounce.
Powdered Corrossive Sublimate, - -	1 ounce.

Melt the euphorbium in the turpentine over a slow fire, (use an earthen vessel to prepare it in) and when thoroughly melted, remove from the fire. With a wooden spatula stir in the corrosive sublimate. Have previously prepared a piece of strong cloth four inches wide and two yards long. After cutting the hair from the tumor, spread

on the salve; while warm. Now put on the bandage; winding both above and below the Os calcis, (point of the hock.) Sew on the bandage, so that it will remain for twelve or fourteen hours.

In very severe cases it is advisable to leave the bandage on for fourteen hours, but usually twelve hours will be sufficient. When the bandage has been removed, all further treatment that will be necessary is to well grease the part every day until healed. In rare cases this treatment may have to be repeated at the end of two weeks. With the above treatment we have succeeded in removing the lameness in one hundred and twenty-three cases of bone-spavins and ring-bones in the past five years: having had to repeat the treatment in five or six cases. In some cases the horse ceased to be lame within forty-eight hours.

Splints.

The ointment of red Iiodide of Mercury recommended for spavins will remove a splint in a few weeks.

Ring-Bones.

The same treatment given for bone-spavin will also remove the lameness caused by ring-bone.

Curbs.

Use the red Iodide of Mercury ointment after the inflammation subsides. It will remove any curb.

Wind-Galls.

Use the red Iodide of Mercury ointment. Rub thoroughly into the skin once a day to keep up a slight irritation.

Bog-Spavin.

Attached to the extremities of most of the tendons, and between the tendons and other parts, are little bags containing a mucous substance to enable the tendons to slide over each other without friction, and to move easily on the neighboring parts. From violent exercise these vessels are liable to enlarge. There is one of them on the

inside of the hock; and many writers and practitioners claim that bog-spavin is nothing more or less than an enlargement of this sack. Much error exists in regard to this. We speak with confidence, after numerous dissections, when we say, that this disease does not occur from the enlargement of any mucous bag; but that a bog-spavin is nothing more or less than a distention of the capsular ligament of the joint itself: so that if we cut into it, as many recommend, we open the joint and endanger the life of the animal. There are different degrees of severity in which this disease may exist; it may be merely an increased secretion of synovia, (joint oil) so as to distend the ligament, and in such case it is readily curable; or it may be, as it more frequently is, a rupture of the connections of the ligament from the bones, as not only to distend, but actually to enlarge the cavity of the joint. In the latter instance, though the disease may be temporarily removed, it generally recurs with work.

Thoroughpins, are the same morbid affection as the bog-spavin, but affecting the upper and back part of the joint, and may be on one or both sides. Usually the two affections exist at the same time.

By pressure on the bog-spavin we will notice an enlargement or bulging out of the thoroughpen, and *vice versa;* the fluid passing through the joint, from one enlargement to the other.

The two affections being the same, they require the same treatment.

Treatment.—The proper treatment for bog-spavin and thoroughpin, is to endeavor to promote the absorption of the excess of fluid, and at the same time, if possible, assist nature in her attempt to grow the distended ligament to the bones.

The best treatment which we have been able to find, is the repeated application of the red iodide of mercury ointment recommended for bone-spavin and curbs. At the same time, it will be necessary to use a compress, bound on with bandages, in order to keep the distended ligament in contact with the bones of the hock. For this purpose take a fold of cloth about four inches square, on which place a half of a large cork, place these on the enlargement, and bind with the bandages. This treatment, faithfully persevered in, will usually affect a cure in from six to eight weeks. The bandages should be removed every twelve hours, and the limb be well hand-rubbed, in order to keep up the proper circulation of the blood. The animal should have perfect rest.

Corns.

Corns are of four kinds—the old, the new, the sappy and the suppurating; all are caused by bruises to the sensitive sole.

Corns in the horse do not answer to those excrescences found upon the feet of man; being bruises, they consist of effusion in every instance. The effusion may either be of blood or of serum; blood constitutes the old and the new corn, serum gives rise to the sappy corn.

The suppurative corn is an after-consequence of either of those just named; when the effusion has been so large as to defy absorption, a new action is started up—pus, (matter) is secreted, and a suppurative corn is created.

For an old, or for a new corn, pare the sole sufficient to prevent the shoe from resting on the corn-seat, put on a few drops Ter-chloride antimony, then turn on melted pitch or tar; and crowd under the shoe a little tow or cotton.

If a suppurating corn be present, the sole must be gradually removed until the pus is released; cut away every particle of detached horn; wash out the cavity with a solution of chloride of zinc—one grain of zinc to one ounce of water—fill the cavity with tar or pitch, and covering with tow or cotton, as above.

Sappy corns should be treated the same as suppurative corn. In both cases, as soon as the orifice is protected by new horn, the horse should be shod with leather under the shoe, covering the whole surface under the foot.

Thrush.

This is a very common affection of the horse. It may be caused by internal disease, but the usual cause is bad stable management. When internal disease gives rise to thrush, it is present in the fore feet. When provoked by bad stable management, it shows itself in the hind feet.

Thrush is a foul discharge from the cleft of the frog, and attended with disorganization of the horn. If in the fore foot, the quarters will be strong and high; the sole thick and concave; the frog small and ragged. When in the hind foot, the foot may be of any shape, but the frog is generally large, and the discharge will be more copious than in the former instance.

Treatment.—The first thing is to cleanse the stable thoroughly. Bed down the stalls with clean, dry straw. Wash the feet clean with water, in every pint of which is dissolved two scruples of chloride of zinc. When the fetor has been removed, with a sharp knife cut away every particle of the diseased frog; the knife to be used until all the white powdery substance is effectually removed.

The shoe is to be nailed on and the animal returned to his stable.

The cause being removed, the effect will soon cease. No ointment or grease of any kind are required. Once or twice a day wash the feet with the chloride of zinc lotion; three grains to the ounce of water. The wash to be forced into every portion of the diseased foot with a swab, or piece of sponge.

Acute Lammitis, or Fever in the Feet---Founder.

There is but one cause for this disease; and that is, man's brutality. The symptoms of the disease as given by Prof. Maghen, are: "The horse is found all in a heap, and the food untouched; the flesh quivering; the eyes glaring; the nostrils are distended, and the breath jerking. The flanks are tucked up; the back roached, the head erect, and the mouth is firmly closed; the hind legs are advanced to take the bearing from the inflamed fore members; the front feet are pushed forward, so as to receive the least possible amount of weight, and that upon the heels; but the feet thus placed are constantly on the move. Now, one leg is slightly bent; then that is down and the other is raised; the horse is, according to a vulgar phrase, "dancing on hot irons." In this attitude the wretched quadruped will stand, its sides heaving and its flesh creeping, with the pain within its hoofs, and with the fire that burns within its blood.

The teeth are occasionally heard to grind against each other; expressive sounds sometimes issue from the throat, and partial perspiration burst forth upon the body; it is a horrible picture of the largest agony.

"The fore feet are mostly the seat of the disorder; all four feet may be involved, but the author has only witnessed the fore feet affected.

"Horses sometimes lie down in this disease; but they more generally stand. When down they should be suffered to remain."

Treatment.—The usual method of treating this disease is to bleed

regularly from the jugglar vein; but we have had far better success in local, than general bleeding. Open the plate vein just below the button, on the inside of each fore leg. The vein can be found very readily, as it is usually gorged to double its natural size. One quart of blood abstracted from each leg will afford greater relief than a pail-full taken from the neck.

Pin up the orifice, and place the feet in a tub of water, as hot as the horse can bear, without scalding. Keep them in the water for three or for hours at a time; repeating the operation several times during the day for several days. Give the horse the following drench:

Castor Oil, - - - - - -	1½ Pint.
Croton Oil, - - - - - -	30 drops.
Oil Sassafras, - - - - -	2 ounces.

Mix thoroughly and give at a draught. Give on the tongue every half hour, until the fever abates,

Tincture Arnica, - - - -	10 drops.

Fifteen minutes after giving the arnica, give

Tincture Rhus Toxicodendron, - -	10 drops.

Continue giving these drops every fifteen minutes apart, as long as the horse has any fever.

If the Rhus Tox. cannot be found, give in its stead the fluid extract of Belladonna.

The animal should be kept well clothed, in order to start the perspiration freely. At each time after removing the feet from the water, the legs should be rubbed dry, and bandaged with flannel.

Navicular Disease.

This disease is the scourge of horse-flesh; and is one of the most frequent diseases to which the horse is afflicted. It is a disease of the navicular bone; a small wedge-like bone above the frog; articulating with the lower pastern bone above, and the coffin bone below. In its union with these two bones it helps to form the coffin joint.

Symptoms.—The symptoms of this disease are so plain that any ordinary observer ought not to be mistaken. While standing, the horse will point with, or place the diseased foot forward, or if both feet are affected, he will alternately place one foot before the other.

When taken out of the stable, his step will be short and quick, and the feet will be placed gently and tenderly on the ground. He is constantly tripping and stumbling; sometimes he will go lame only for a short distance, at other times he will continue lame during the journey. In a short time the hoof becomes dry and hard, the heel high, and the foot contracted. At times the foot will be feverish, and again there will be no change in the temperature.

After the horse has been lame for some time in both feet, he usually points the fore feet as far forward as possible, which causes the muscles of the chest to be thrown backward, giving the chest the appearance of being sunk in. This is what many term "chest founder." The term is a misnomer, however, as *there is no such disease.*

A large majority of horses that are lame in the fore feet, are afflicted with this disease; but not understanding the symptoms, many persons try to locate the disease in the shoulder; a mistake that is entirely inexcusable.

Treatment.—In treating this disease, the first thing to be done is to soften the hoofs and remove the fever. For this purpose the foot, or feet, should be placed in a tub of warm water, for at least an hour at a time for several days. After removing them from the water, they should be wiped dry with cloths; the bottoms packed with wet clay every twelve hours, the dry clay to be removed each time, and the hoofs should be thoroughly anointed once each day from the hair down, with the hoof ointment, recommended in the back part of the book.

This treatment should be continued for weeks, and if the disease has not progressed for too long a time, we have reasonable hopes of success.

Poll Evil.

Poll Evil consists of a deep abscess on the most forward portion of the neck, near the top of the head; ending in an ulcerous sore which usually has numerous sinuses.

When an enlargement first appears on the poll, if pus has not yet formed, it can very readily be removed by a few applications of the following liniment:

Powdered Corrosive Sublimate, -	½ ounce.
Camphor Gum, - - -	½ ounce.

These to be put in four ounces of alcohol, and when thoroughly dissolved, add

Spirits Turpentine. - - - 4 ounces.

Apply to the tumor with a swab once a day for three or four days, then discontinue for a week, and if any of the enlargement remians, apply again. If there should be any pus in the tumor, this liniment will assist in bringing it to the surface, and if there is no pus, the enlargement will disappear.

If pus is formed, open the prominent or soft places. Allow the pus to issue; then cut down on the wound till the seat of the disease is reached. Use a proper knife, and include as many pipes as possible in one clean cut. All others should join this. Empty out all the concrete matter. Wash the cavity with cold water. Excise all loose pieces of tendon and all unhealthy flesh. Wash the sore three times a day with the chloride of zinc lotion, one grain to the ounce, and cover the wound with a piece of cloth dipped in tar-water. If the tumor has burst, still include the pipes in one smooth incission; clean out the concrete pus and treat as has been directed. Spare the ligament which lies under the mane, and work in a breast-collar after recovery.

Fistulous Withers.

This disease closely resembles poll evil, and in its first stage, the treatment recommended for the first stage of that disease, is also applicable here.

When pus has been formed, it is especially necessary that an incission be made at once. Wash the wound as has been recommended for poll evil. This having been done take a probe and feel for any sinuses that may be formed. When you have found the number and location of the sinuses, or pipes, insert in each sinus a piece of lunar caustic (the stick), and with the probe insert it to the bottom of the sinus. Do nothing more to it for twenty-four hours, by that time there will be a hard pipe like substance extending from the surface, to the bottom of the sinus. Now take a common catheter and introduce it in the sinus, by the side of the pipe. Insert it to the bottom of the sinus; with a syringe fitting the end of the catheter, inject castile soap and soft water, with sufficient force to loosen the pipe at the bottom. Pull out the pipe, and after cleansing the sinus with the soap-suds, inject the chloride of zinc lotion, one grain to the

ounce, continue this treatment twice a day, taking particular pains to get the wash to the bottom of the sinus.

Formulas.

The following formulas are preparations which originated with the author, and have been used by him for years. The reader need have no hesitancy in applying them as recommended. There is not one of them but what is worth more than the price of this book:

Alterative Powders.

Ground Flaxseed	1	pound.
Saltpeter,	4	ounces.
Rosin,	2	ounces.
Sulphur,	1	ounce.
Gentian Root, powdered,	1	ounce.
Golden Seal, "	1	ounce.
Elecampane,	1	ounce.
Liquorice,	1	ounce.
Ginger,	1	ounce.
Sub. Carbonate of Iron,	1	ounce.
Cream Tartar,	1	ounce.
Sassafras Bark,	1	ounce.
Lobelia Seed, pulverized,	1	ounce.
Capsicum,	½	ounce.
Bloodroot,	½	ounce.

Dose.—One teaspoonful in bran-mash twice a day. For horned cattle, dose, one tablespoonful twice a day.

Liquid Alterative.

Tincture Chloride of Iron,	10	ounces.
Liquor Arsenicalis,	6	ounces.

Dose.—One ounce to be put in one pint of water and mixed with feed once a day.

This is the best tonic alterative that we have ever used. Whenever the digestive organs are impaired, which may be detected by the passage of undigested grain, the coat rough, the skin tight, and the

appetite poor; this preparation will tone up the system and give new life and vigor to the organs.

Black Oil.

For Scratches, Grease Heel, Sore Necks and Shoulders:

Spirits Turpentine,	1	pint.
Linseed Oil,	1	pint.
Oil Tar,	4	ounces.
Oil Stone,	4	ounces.
Tincture Iodine,	1	ounce.

Mix in a stone jug, and slowly add

Sulphuric Acid,	2	ounces.

Leave out the cork until cold.

If an ointment is preferred, make the following:

Black Ointment.

Lard,	1	pound.
Spirits Turpentine,	2	ounces.
Oil Amber,	1	ounces.

Slowly add

Sulphuric Acid,	2	ounces.

Hoof Ointment.

For softening hoofs.

Linseed Oil,	1	pint.
Bees' Wax	4	ounces.
Balsam Fir,	2	ounces.
Venice Turpentine,	2	ounces.
Oil Amber, Rectified,	2	ounces.

Melt together, over a slow fire.

To 4 ounces of the above add 1 ounce oxide of zinc, and you have an excellent healing ointment.

To the hoof ointment add:

Finely Pulverized Verdigris,	1	ounce.

and we have a fine green ointment for old sores.

For fresh wounds.

Chloride of Zinc Solution.

Chloride of Zinc,	1	dram.
Rain Water,	1	quart.

This makes a fine dressing for fresh wounds, far better than any ointments or liniments.

No. 1 Liniment.

For relaxing muscles.

Coal Oil,	2	quarts.
Boiled Linseed Oil,	2	quarts.
Oil Hemlock,	8	ounces.
Camphor Gum,	4	ounces.
Aqua Ammonia, concentrated,	½	ounce.

This liniment will relax contracted muscles quicker than any preparation I ever used. It is also good for rheumatism. It will cure corns and bunions on human feet. When used on horse flesh, it should not be rubbed in, as it will blister.

Stimulating Liniment.

Alcohol,	1	pint.
Oil Origanum,	1	ounce.
Oil Cedar,	1	ounce.
Oil Lavander,	1	ounce.
Camphor Gum,	1	ounce.
Aqua Ammonia, f. f. f.,	1	ounce.

Liniment.

To remove inflammation.

Tincture Aconite Root,	2	ounces.
Sulphuric Ether,	2	ounces.
Aqua Ammonia, f. f. f.,	2	drams.

Bathe the parts inflamed three times a day. Rub well with the hand.

Worm Powder.

Copperas, powdered,	1	ounce.
White Sugar,	1	ounce.

Mix.

Dose.—One teaspoonful in warm bran-mash three times a day.

Worm Powders, No. 2.

Calomel,	1	dram.
Tartar Emetic,	½	dram.
Santonine,	10	grains.

Mix, and give at a dose once a day for four or five days, then give one quart raw linseed oil.

Healing Ointment.

For Scratches, Sore Necks, Shoulders, etc.

Lard,	4	ounces.
Oxide of Zinc,	½	ounce.
Calomel,	2	drams.

Mix. Rub thoroughly together. Rub a little on the affected parts twice or three times a day.

The author has covered more ground than he intended at the outset, yet this was found necessary to enable his readers to understand the symptoms and treatment of those diseases which are commonly met with at the present day. Had the limits of the work permitted, more space would have been allotted to the *cause* of disease, as it is a subject, which every owner of the horse ought to thoroughly understand. Should this effort be kindly received by the public, the author may at some future time conclude to revise the work, making it as complete as possible. With many thanks for the individual acts of kindness, and the increasing patronage which the author has received during his residence in Minnesota, he humbly takes his leave, trusting that he has assisted in disseminating views which may be profitable to his readers.

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